

APPLICANT(S): BARTLETT, Philip Nigel
SERIAL NO.: Not Yet Known
FILED: Herewith
Page 2

AMENDMENTS TO SPECIFICATION

In the Specification:

On page 1, line 3, please insert the following:

--CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a National Phase Application of PCT International Application No. PCT/GB2003/005441, International Filing Date 12 December, 2003, claiming priority of UK Patent Application GB 0229080.7, filed 12 December, 2002, which are hereby incorporated by reference in their entirety.

FIELD OF THE INVENTION --

On page 1, line 9, please insert the following:

-- BACKGROUND OF THE INVENTION --

On page 1, line 12, please replace the following paragraph:

~~It should be noted that the term "battery" is used herein in its common meaning of a device that converts the chemical energy contained in its active components directly into electrical energy by means of a redox (oxidation-reduction) reaction. The basic unit of a battery is an electrochemical cell, which will comprise at least a positive electrode, a negative electrode and an electrolyte, the whole contained within a casing. Other components, such as separators, may be included, as is well known in the art. A battery may consist of one or more such cells.~~

With the following lines:

-- SUMMARY OF THE INVENTION --

On page 2, line 3, please insert the following:

-- BRIEF DESCRIPTION OF THE DRAWINGS

APPLICANT(S): BARTLETT, Philip Nigel

SERIAL NO.: Not Yet Known

FILED: Herewith

Page 3

The invention is illustrated by the following non-limiting examples, with reference to the Figures, in which:

Figure 1 represents a schematic drawing showing the flow of protons on charge and discharge to and from a Pd lattice into a NiOOH positive electrode proton sink;

Figure 2 shows a comparison of the cyclic voltammetry of a 1 mm diameter H_I Pd disc (—) with that of a 200 ?m H_I Ni disc (- - -) in 6 M KOH at 20 mV s⁻¹;

Figure 3 shows the charge/discharge behaviour of a 200 ?m H_I Ni disc based supercapacitor by cyclic voltammetry at 20 mV s⁻¹ separated by 1 cm in 6 M KOH;

Figure 4 shows the flow of charge from the device versus potential during the 20 mV s⁻¹ discharge depicted in Figure 3;

Figure 5 shows the potential step charging/discharging of a H_I Ni/H_I Pd supercapacitor in 6 M KOH composed of a 200 ?m H_I Ni disc with a 1 cm² H_I Pd electrode in 6 M KOH;

Figure 6 shows a comparison of the first full cycle (—) of a 1 cm² H_I Ni/1 cm² H_I Pd supercapacitor incorporating a porous PTFE separator with the 15000th cycle (—) at 500 mV s⁻¹;

Figure 7 represents a schematic drawing of the H_I electrode structure showing a pore ringed by oxidised active material Ni(OH)₂ which is held in a matrix of a nickel current collector, and further showing the active material occupying 45 % of the electrode bulk area;

Figure 8 shows a cyclic voltammogram of a liquid crystal templated iron electrode between -0.3 V and -1.2 V vs Hg/HgO in 6 M KOH at 20 mV s⁻¹ and 25 °C, as prepared in Example 3;

Figure 9 shows the potential-charge relationship of the cyclic voltammogram shown in Figure 8;

Figure 10 shows a cyclic voltammogram of mesoporous nickel versus liquid crystal templated iron in a two electrode set-up between 0 V and 1.4 V in 6 M KOH at 5 mV s⁻¹ and 25 °C, as prepared in Example 3; and

APPLICANT(S): BARTLETT, Philip Nigel
SERIAL NO.: Not Yet Known
FILED: Herewith
Page 4

Figure 11 shows the potential-charge relationship of the cyclic voltammogram shown in Figure 10.

DETAILED DESCRIPTION OF THE INVENTION --

On page 6, line 22, please insert the following:

-- It should be noted that the term "battery" is used herein in its common meaning of a device that converts the chemical energy contained in its active components directly into electrical energy by means of a redox (oxidation-reduction) reaction. The basic unit of a battery is an electrochemical cell, which will comprise at least a positive electrode, a negative electrode and an electrolyte, the whole contained within a casing. Other components, such as separators, may be included, as is well known in the art. A battery may consist of one or more such cells. --